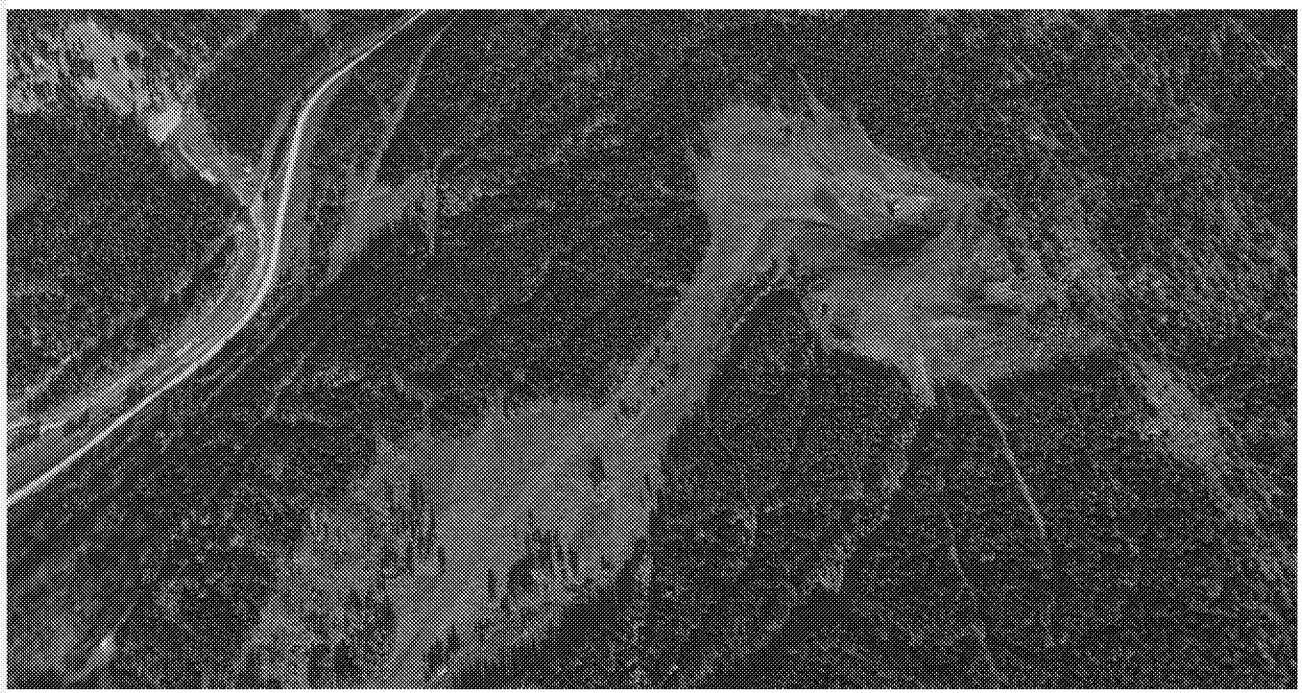

Michel Coal Project

Draft Application Information Requirements

Tracking Table

15 November 2019

Valued Components

Michel Coal Project

Draft Application Information Requirements

Tracking Table

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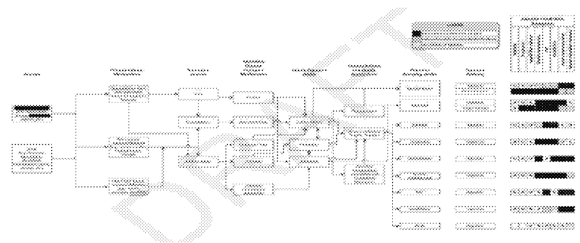
15 November 2019

Purpose of Document

This document presents, in table form, the comments received and issues tracked from the Working Group meetings and the Valued Components document that needed to be addressed in the dAIR. North Coal provides responses to the comments and indicates where and what changes have been made to the dAIR document as a result.

AIR issues brought forward from VC document and Working Group Workshops. 15-Nov-19

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
1	KNC	2019-03-12		Compliance limits set in the Elk Valley Water Quality Plan (EVWQP) are not necessarily set to avoid direct toxicity compared to other effluent standards but rather speak to management. o North Coal will be generating predictions for water quality and an Aquatics Assessment for Fish and Fish Habitat o Struggle with the incremental load at MC 2, North Coal and Teck will have to work together to make sure the limits at MC 2 are being met o Modelling pieces that need to be considered to be flagged during AIR process	Under the water quality VC scope in the AIR, the water management points for the Project are outlined in the Context and Boundaries section and include Michel 13 (just downstream of all Project facilities), the Discharge, Michel 1 (an EVWQP compliance site), and Lake Kookanoosa inlet. The approach to modeling will integrate the EVWQP as presented in the water quality Existing Conditions section.	4.5.1 and 4.5.2	y
2	KNC	2019-03-12		Tributaries are identified as important ecosystems in the Elk Valley o How is the protection of tributaries being brought into the VCs and AIR? o Can identify important tributaries through the baseline work o Currently no plans for a Tributary Management Plan	Environmental flow is an indicator for surface water quantity.	4.4	y
3	KNC	2019-03-12		At what point will North Coal be identifying the vulnerable receptors for Human Health Risk Assessment (HHRA)? o Thinking specifically of Corbin, seasonal camps, KNC locations, etc. o Currently going through a problem formulation process that will outline how the Risk Assessment (RA) will be conducted o Lots of flexibility in how the RA can be addressed and established o Will be formalized during the AIR process	The list of sensitive receptors for the HHRA include the following: • Accommodation centres • Camping areas • Community services • Day care centres • Education centres • Gardening areas • Health care centres • Motorized recreation • Non -motorized recreation • Parks • Recreation areas • Senior facilities • Service areas	8.1.2	y
4	KNC	2019-03-12		Will there be overlap with the species of conservation concern? o Should we expect to see an assessment for badger on its own and then aggregate for species of concern, unsure how they are grouped? o Reason North Coal has a specific category for species of conservation concern is because the list changes regularly, wanted to make sure we didn't miss anything o How much emphasis will be placed on the individual vs. grouped? o Detail of study will be determined during the AIR process o Expect the bulk of the VCs will be reported individually and then examined as a group	Development of mitigations and determining the level of effects and determination of significance will look at the individual species and groups as defined in the subcomponents lists. For species of conservation concern, species-specific mitigations and assessments are needed for any listed wildlife species to conform with section 79(2) the Species at Risk Act. Migratory birds need to be assessed as a whole to conform with Section 5(1) of CEAA 2012.	4.13.2	y

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
5	KNC	2019-03-12		Concerned that the RSA for some species is too large and impact dilution o RSA's were developed by species experts o Focus of splitting into small and wide-ranging species was to add significance o Need large RSAs to examine habitat connectivity and fragmentation o Assessment details will be determined through the AIR process	Assessment boundaries include both boundaries for wide-ranging and small-ranging species to address scale in determining signficance. Development of mitigations and determining the level of effects and determination of significance will look at the individual species and groups as defined in the subcomponents lists. For species of conservation concern, species-specific mitigations and assessments are needed for any listed wildlife species to conform with section 79(2) the Species at Risk Act. Migratory birds need to be assessed as a whole to conform with Section 5(1) of CEAA 2012.	4.13.1 and 4.13.2	y
6	KNC	2019-03-12		Ensure connectivity and movement are part of the determination of significance of wildlife effects in the AIR.	The AIR specifies that for the assessment the potential effects could include clearing of land for mine construction and operations could result in loss of wildlife habitat quantity or quality and/or changes in the connectivity and security of wildlife habitat, potentially including fragmentation / loss of physical connectivity corridors needed to maintain populations, genetic variability, migration or movement.	4.13.3	y
7	KNC	2019-04-08	Jesse Sinclair	I would like to see a fulsome conceptual site model (CSM) be developed to identify the assessment endpoints (things that we are trying to protect) and measurement endpoints (the metrics that will be measured to evaluate effects on the assessment endpoints. An example CSM is: 	This is already addressed in the AIR. Models will be presented in the EAC application. The methodology is described in Sections 4.14.2 Wildlife health and 8.1.2 Human Health.	4.14.2 Wildlife Health 8.1.2 Human Health.	Y
7	BCEAO	2019-03-12		LSA and RSA's can be amended up until the approval of the Additional Information Requirements (AIR)	Note taken forward from VC discussions.	3.2 and the Context and Boundaries subsections of Sections 4, 5, 6, 7 and 8.	y
8	ECCC	2019-03-12		AIR will have more information on where North Coal is expected to provide predictions [of water quality]	Under the water quality VC scope in the AIR, the water management points for the Project are outlined in the Context and Boundaries section and include Michel 13 (just downstream of all Project facilities), the Discharge, Michel 1 (an EVWQP compliance site), and Lake Kookanoosa inlet. The approach to modeling will integrate the EVWQP as presented in the water quality Existing Conditions section.	4.5.1 and 4.5.2	y

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
9	CEAA	2019-03-12		Expect to see criteria for determining significance and review at the AIR stage	As stated in Section 3.6, significance of residual effects will be assessed using the residual effects criteria context, magnitude, extent, duration, reversibility, and frequency, as defined in EAO's Guideline for the Selection of Valued Components and Assessment of Potential Effects. The specific levels and thresholds for each criteria will be defined in the Application. VC-specific thresholds will be defined for the relevant indicators that are presented throughout Sections 4, 5, 6, 7, and 8 of the draft AIR.	3.6	y
10	Interior Health	2019-03-12		Don't want the Public Health Act and Drinking Water Protection Act forgotten as regulatory components for the VC and AIR	Key legislation listed in the draft AIR include BC *Public Health Act* (SBC 2003, c.23) and the *Drinking Water Protection Act* (SBC. 2001, c. 9).	4.5.2	y
11	MECC	2019-03-27	Kyle Terry	Surface water quantity will need to consider temporal and spatial variability of water quantity and changes to water quantity. To be detailed further in the AIR.	Aquatic resource boundaries are defined by watershed boundaries where any effects will be measurable. The local study area (LSA) for aquatic resources is the Michel Creek watershed extending upstream into the Alexander Creek watershed enough to incorporate any variability in groundwater contribution due to the potential for limestone karst surficial geology. The regional study area (RSA) is the Elk River watershed where cumulative effects and objectives are determined by the Elk Valley Water Quality Plan. Teck Coal's (Teck) Coal Mountain Operations are located in the southern edge of the LSA, while the RSA includes Teck's Elkview Operations, Line Creek Operations, Greenhills Operations, and Fording River Operations. The RSA extends into the inlet to the Koocanusa Reservoir, as defined by the EVWQP station RG_DSELK_Inflow; E300230. The assessment will cover construction, operational, closure, and post-closure periods.	4.4.1	y
12	MECC	2019-03-27	Kyle Terry	It is expected that North Coal will be required to meet standards ....Due to current drinking water quality risks at Sparwood that could be exacerbated by this project, it is expected that NC will also model water quality at the mouth of Michel Creek. Water quality prediction locations and requirements will be discussed and detailed further within the AIR.	Under the water quality VC scope in the AIR, the water management points for the Project are outlined in the Context and Boundaries section and include Michel 13 (just downstream of all Project facilities), the Discharge, Michel 1 (an EVWQP compliance site), and Lake Kookanoosa inlet. The approach to modeling will integrate the EVWQP as presented in the water quality Existing Conditions section.	4.5.1 and 4.5.2	y

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13	MECC	2019-03-27	Kyle Terry	North Coal cannot compute contributions to Lake Koocanusa ... North Coal has been provided with the required outputs from the EVWQP to model water quality in Koocanusa Reservoir. NC will be required to develop water quality model predictions in the reservoir, as will be documented in the AIR.	Under the water quality VC scope in the AIR, the water management points for the Project are outlined in the Context and Boundaries section and include Michel 13 (just downstream of all Project facilities), the Discharge, Michel 1 (an EVWQP compliance site), and Lake Kookanoosa inlet. The approach to modeling will integrate the EVWQP as presented in the water quality Existing Conditions section.	4.5.1 and 4.5.2	y
14	MECC	2019-03-27	Sarah Alloisio	Groundwater (Quality and Quantity) Potential effects of pit dewatering on the groundwater discharge to streams (baseflow) should be included in the assessment. Reductions in baseflow should also be assessed in terms on potential alteration in the physical and chemical attributes of the hyporheic zone, and their ultimate effects on fish habitat. Assessment requirements will be outline in the AIR.	As defined in Section 4.3, groundwater is an intermediate VC and a potential pathway to receptor VCs including surface water quantity and quality, aquatic resources, fish and fish habitat, aquatic health, wildlife and wildlife habitat, wildlife health, and community health. As included in the surface water quantity Section 4.4.3, pit dewatering effects on the groundwater discharge to streams (baseflow) will also be analyzed. The resulting water balance model and water quality model (that both incorporate groundwater changes) will be used for the fish and wildlife habitat assessments.	4.3, 4.4.3	y
15	FLNRORD	2019-04-01	Garrett McLaughlin	In regards to climate change issues, I find the included "Environment / Physical Environment – Air VC" (Table 6-1) to be appropriate. However, I do suggest that the Potential Effects should include emissions from deforestation activities (i.e. land-use change/land clearing from forest to non-forest), in addition to the listed emissions from blasting, ore transport, equipment, wash plant, and vehicle traffic. Input from Greg Ashcroft: Global Climate was removed as a VC, and therefore GHG emissions are not assessed for effects, but you will be predicting and reporting out on GHG emissions in the Application (and will mention where in the draft AIR), and that will include any emissions that you predict from forest/vegetation removal for your project. Your response to Garrett's comment in the tracking table should mention how you will be treating the GHGs in your assessment, including those from de-forestation activities.	Greenhouse gas emissions from deforestation can be substantial, particularly CO_2 emissions because of the high carbon density in wood and below-ground organic material. Emissions of N_2O and CH_4 associated with deforestation are mostly expected from brush burning. Estimation of CO_2 emissions are an ongoing research topic because of uncertainties for example in soil and above-ground recovery and mid- to long-term storage of carbon in wood products that are manufactured from salvaged timber. Guidance from March 2014 was made available by the EAO (EAO personal communication, 2018) and will be followed taking into consideration the existing levels of deforestation. Modifications may be considered if more accurate local estimates of above-ground biomass are available.	4.1.2	y

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16	KNC	2019-04-08	Jesse Sinclair	*Aquatic Resources* are included as a VC; however, it is implied that evaluation will be based on benthic invertebrate and fish abundance and diversity. The quality of these resources (e.g., tissue quality) should be included in the assessment of this component. In addition, the scope of this value component should include other ecological receptors include periphyton and aquatic-dependent wildlife (e.g., amphibians, birds, and mammals).	For aquatic resources in Section 4.8, indicators for benthic invertebrates include changes in distribution, diversity indices, EPT index (an indicator of sensitive species including mayflies, stoneflies, and caddisflies), and community structure consistent with regional monitoring efforts. Indicators for algae include changes in relative abundance, distribution, and community structure consistent with regional monitoring efforts. For aquatic health in Section 4.10, indicators for aquatic health include evaluations of invertebrate community metrics such as abundance and fish population indices (e.g., growth, condition factor) in addition to changes in baseline surface water quality and changes in tissue metal concentrations including selenium and other metals.	4.8 and 4.10	y
17	BCEAO	2019-05-24	Teresa Morris	You must follow EAO's VC Guidance/updated in 2017 to reflect: - All components are VCs - All VCs will be characterized using standard criteria - Significance will be assessed for all receptor components and sometimes, where there are exceptional circumstances, for intermediate components when specified in the AIR. EAO anticipates Water Quality will require a significance determination (as it did for Baldy Ridge).	BC EAO has indicated that intermediate VCs will not be assessed for significance, only for context, magnitude, extent, duration, reversibility, and frequency. As included in Section 3.8, a conclusion of significance of residual adverse effects will be provided for each receptor VC.	3.8	y

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
18	MECC	2019-06-18	Kyle Terry	Specific modelling requirements will be detailed in the AIR. Additionally, please consider the following when discussing/reporting on this topic in future. 1. Please do not refer to a Water Quality Attainment Point in any EAC application documentation. North Coal does not have an attainment point. The location of a possible "attainment point" will be determined by ENV during the permitting process. At the EAC stage the Michel 13 location is simply a water quality modelling node where NC will model project related effects in Michel Creek. 2. Michel 1. Water quality modelling requirements will be determined as part of the AIR. If NC is required to model water quality at this location as part of the AIR then it is expected you will do so. 3. The title of the RG_DSELK_Inflow is likely a bit misleading. This modelling location is IN the reservoir, downstream of the Elk River. It assumes complete mixing with the Kootenay River. Modelling with these data will meet the requirement of modelling water quality in the Koocanusa Reservoir.	Under the water quality VC scope in the AIR, the water management points for the Project are outlined in the Context and Boundaries section and include Michel 13 (just downstream of all Project facilities), the Discharge, Michel 1 (an EVWQP compliance site), and Lake Kookanoosa inlet. The approach to modeling will integrate the EVWQP as presented in the water quality Existing Conditions section.	4.5.1 and 4.5.2	y
19	Terry Melcer, on behalf of District of Elkford	Aug-19	N/A	Social: Education, apprenticeships and training has been identified as a current gap. Training needs to be offered locally to allow for single parents and those under employed to attain the skills needed for employment. Falling under both the economic and social pillars, Elkford advocates for a local hiring policy. Elkford advocates for a proactive approach to childcare issues.	Local hiring policies and proactive approaches to childcare issues are being discussed by North Coal with stakeholders as potential mitigation strategies. Mitigation measures for effects on Eductation, Skills and Training required to be presented in the Application.	6.1.4	y
20	Terry Melcer, on behalf of District of Elkford	Aug-19	N/A	Housing: Affordable housing and general housing availability, as well as contractor accommodation are current issues, which will be compounded by a new mine becoming operational.	Housing issues and potential mitigation strategies are being discussed with stakeholders as part of North Coal's ongoing engagement program. Mitigation measures for effects on Community Infrastructure and Services (including housing) are required to be addressed in the Application .	6.2.4	y
21	Terry Melcer, on behalf of District of Elkford	Aug-19	N/A	Community Well being: Elkford advocates for workforce shifting of no greater than 4 on, 4 off. Longer rotations allow the workforce to live elsewhere, not contributing to the local economy and communities.	Workforce scheduling will continue to be discussed with stakeholders as part of North Coal's ongoing engagement program. Mitigation measures for effects on Community Wellbeing are required to be addressed in the Application.	6.3.4	y

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22	Terry Melcer, on behalf of District of Elkford	Aug-19	N/A	Visual: mine plans should consider the views from the major transportation networks and preserve the current landscapes visible from the valley floor, wherever possible.	The suggested viewpoints from major transportation networks and the objectives to preserve the current landscapes visible from the valley floor will be considered in the Visual Quality assessment. The method for assessment will follow provincial standards and regional objectives considering stakeholder input as described in the sections of existing conditions and potential effects in the draft AIR.	6.7.2 and 6.7.3	y
23	Terry Melcer, on behalf of District of Elkford	Aug-19	N/A	Environment: (GHG) Elkford sees provision of employee busing from the townsite to mine site as an important factor for road safety, reduction of wildlife highway mortality and GHG emissions reduction.	Contractor and employee transportation methods will continue to be discussed with stakeholders as part of North Coal's ongoing engagement program. Mitigation measures for effects on Community Wellbeing are required to be addressed in the Application.	6.3.4	y
24	Wildsight	Aug-19	N/A	The current cumulative water quality impacts of the existing Elk Valley coal mines clearly preclude any additional mines within the watershed. The current water quality situation is already an international water crisis, so it is unreasonable to consider adding additional mines. Beyond water quality concerns, the Elk Valley is a heavily disturbed landscape, with the impacts of extensive crown-land logging, rapid liquidation logging on extensive private land comprising 1/8th of the Elk Valley owned by Canwel, and the extensive footprint of the existing coal mines. The Elk Valley is a crucial connectivity area for the Yellowstone to Yukon corridor and the Crown of the Continent Ecosystem. Within that context, it is similarly unreasonable to consider any additional large-scale disturbance of the landscape, like that proposed in this project. Wildsight's comments continue in the attached PDF.	The cumulative effects assessment in the Application will address how the Proposed project fits within the Elk Valley Water Quality Plan and the regional planning and Cumulative Effects Model Framework.	4.8.6, 4.9.6, 4.10.6, 4.13.6, 4.14.6	y

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
25	Wildsight	Aug-19	N/A	The Michel Creek watershed in particular is subject to significant cumulative effects of industrial activity and forestry. The Michel Creek watershed is a human disturbed landscape but remains critical to the health and function of the larger landscape of the Elk Valley and beyond. In recent years, the watershed has experienced large scale forest liquidation on private timberlands and aquatic and terrestrial impacts from the Coal Mountain Mine. In recent years, cumulative impacts such as the expansive road networks throughout the Michel Valley have resulted in cascading cumulative effects on wildlife populations and ecological processes. While large portions of the watershed have been degraded by forestry and mining activities the region remains core habitat for grizzly bears, goats, westslope cutthroat trout, whitebark pine, and other species of management concern. The Michel Creek watershed is also critical to the health and function of the larger Crown of the Continent Ecosystem. Wide ranging carnivores like grizzly bears, wolverine, and lynx rely on the health and function of the Michel Creek for connectivity	Wildsight concerns on cumulative development within the Michel Creek watershed landscape and effects on overall ecosystems and habitat for grizzly bears, goats, westslope cutthroat trout, whitebark pine, other species of management concern, wolverine, and lynx are noted. All species of conservation concern are included as valued subcomponents and will be analysed in the effects assessment in the Application.	4.13.6, 4.14.6	y

Item	Agency	Date	WG Member	Comment	Addressed in draft AIR	Draft AIR section #	Done y/n
26	Wildsight	Aug-19	N/A	The Elk Valley Water Quality Plan & Cumulative Effects: References to the EVWQP are found throughout the document, indicating the proponent plans to stay within the limits set out in the EVWQP. The EVWQP is a plan developed and implemented within the context of a single polluter (while Teck has multiple mines, they are just one company). There is no mechanism in the EVWQP to divide up the pollution limits set out in the plan. It is entirely unclear how the proponent proposes to share these pollution limits with Teck or if Teck is at all willing to share pollution limits with the proponent. Teck's economic interest would be to keep all the allowable pollution under the EVWQP limits for their own use. Furthermore, Teck has already allowed selenium pollution in Lake Koocanusa to exceed the limit under the EVWQP and has released modelling showing selenium levels in Lake Koocanusa will be above the EVWQP limit for at least a few years and then remain at the limit for decades. There is simply zero space for additional selenium in the watershed, leaving selenium limits for the proponent at zero. Limits for other pollutants, particularly nitrate, may also be very low or zero. Even with hundreds of millions of dollars spent, Teck has yet to bring selenium or other pollutant levels anywhere near zero. It is highly unlikely that any other company would be able to achieve what Teck hasn't been able to do, at least within the economic realities of the global, competitive coal mining industry. In particular, the proponent proposes to rely on untested and unproven technologies, particularly waste rock dump construction techniques to avoid the release of selenium and technologies with very little real world testing, particularly saturated rock fills for water treatment. Given the already high levels of pollution, it is entirely inappropriate for the proponent to rely on these unproven technologies. The EA process must consider scenarios where these technologies do not work as the proponent hopes. Higher pollution levels, in line with those from existing mines in the Elk Valley, must be fully considered, including their cumulative impacts on all relevant VCs, particularly fish. Even active water treatment technologies, like those used by Teck at their one treatment facility in the Elk Valley, have a very weak track record, with less than a year of operation at West Line Creek since the plant was restarted after the speciation issue was discovered to be increasing the bio-availability of selenium downstream. Active water treatment cannot be relied on for this EA. Additionally, the limit for selenium in Lake Koocanusa may need to be reduced significantly in the near future, in line with	Wildsight concerns on the Elk Valley Water Quality Plan and cumulative effects are noted. The effects will be addressed in the effects assessment in the Application.	4.5.3, 4.8.6, 4.9.6, 4.10.6	y

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				recommendations for the bi-national Lake Koocanusa Monitoring and Research Working Group to protect fish, as detailed below under the fish VCs. In this context, Teck's modelling showing selenium levels reaching 2ug/L for decades, much higher than the likely result of the Koocanusa process, makes it clear that there is absolutely no room for additional selenium pollution in the Elk Valley. If a lower limit is set, Teck will struggle significantly to meet it with their current mines, and may not be able to, making any additional mines unwise.			

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27	Wildsight	Aug-19	N/A	Long-term considerations: Fundamentally, the EA process must consider the long-term impacts of ongoing water pollution after the proponent has finished mining and reclamation. It is well known that selenium leaching from existing Elk Valley coal mines will continue at similar levels to those found at present for centuries or millennia. In this context, any treatment options that require long-term operation (active water treatment, saturated rock fills) are not appropriate. The proponent cannot reasonably commit to operating these treatment facilities for centuries or millennia. For the EA process, the only reasonable approach is to assume these treatment facilities will no longer be operated at some future point, resulting in the full selenium concentrations expected being released into the Elk Valley watershed. As the proponent cannot rely on untested waste rock dump construction techniques, nor on treatment that cannot be operated over the appropriately long time-scale, the only reasonable approach is to consider that the proponent's mines may release similar levels of selenium and other pollutants to existing Elk Valley coal mines over the long term—and to consider the cumulative impacts of that pollution. Furthermore, Teck's plans under the Elk Valley Water Quality Plan rely on expensive active water treatment plants that we cannot reasonably assume they will operate for centuries or millennia. For the purposes of assessing long-term cumulative effects, the EA must assume that all of Teck's current and planned mines will release pollutants without treating them at some future point. In this context, it is even more clear that there is no additional space within the EVWQP or reasonable limits to protect aquatic life to allow any additional water pollution in the long term. Nonetheless, if the proponent continues in the EA process, they must evaluate the full impact of all selenium and other pollution at a point 1000 years in the future, when water treatment is no longer taking place.	Wildsight concerns on long-term effects on water quality from mining are noted and will be addressed in the effects assessment in the Application. The assessment will cover construction, operational, closure, and post-closure periods.	4.4.2, 4.5.3, 4.8.6, 4.9.6, 4.10.6	y
28	Wildsight	Aug-19	N/A	Study areas: The aquatic Regional Study Area must extend downstream beyond Lake Koocanusa, to the Kootenai River and the US endangered white sturgeon found there, as detailed below.	The Project will not be accepted if there are potential effects downstream of Lake Koocanusa; therefore, the aquatic Regional Study Area boundaries should not be extended. Boundaries for the assessment are included in the draft AIR.	4.4.1	y

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29	Wildsight	Aug-19	N/A	Air Quality & Emissions: GHG emissions from this project will be significant (nearby competitor Teck's GHG emissions account for roughly 3% of BC's total emissions). We are living in a climate emergency, with a desperate need to reduce emissions immediately. BC and Canada's climate plans acknowledge this fact, but fail to provide a clear pathway to the needed emissions reductions. In any case, GHG emissions are hugely important and should be fully studied in context as a standalone VC, especially given as their impact is global, which is very different from the local air quality scope. Given Canada and BC's commitments to significantly reduce GHG emissions, but as of yet the lack of clear plans from either jurisdiction on emissions from coal mining or similar extractive industries, it is difficult for the project to be evaluated against any particular standard. It is unclear from the draft VC how the project will be evaluated. We suggest that, given that BC and Canada have committed to reducing GHG emissions (and BC has committed to reducing industrial emissions, including mining emissions, significantly), the only reasonable standard to measure the project against is no net increase in GHG emissions. The proponent needs to address how GHG emissions associated with the project would be in line with BC and Canada's, as well as UN, commitments to reduce emissions. Of note, BC's climate plan accounting does not appear to allow for any emission increases from the mining sector. If the project will increase GHG emissions, as it certainly significantly will, it should not proceed. Additionally, the project is a coal mine. In the steelmaking process, roughly 99% of the carbon in the coal used ends up in our atmosphere. The EA must consider the total worldwide GHG emissions associated with the mine, not just direct emissions, including the burning of the mined coal to produce steel. Additional transportation in BC (by rail) is an important component of this VC which must be evaluated, along with all lifecycle emissions. Global warming is a global problem and the only appropriate scope for assessing this component is global, with a lifecycle approach, including extraction, transportation and use.	Projected GHG emissions from the Project following all mitigation measures will be presented in the Application. Any conditions for emission caps or additional offset requirements for the Project would be set by government at the end of the environmental assessment process.	4.1.3	y
30	Wildsight	Aug-19	N/A	Surface Water: Given the well-known coal mine water pollution problems in the Elk Valley, this is a crucial VC. In addition to the pollutants mentioned, the VCs must also address nickel pollution, known to be a growing problem in the Elk Valley. The VCs must also address calcite, also a well-known issue in the Elk Valley.	Nickel is one of the parameters in the suite of parameters with BC and Canadian water quality guidelines and will be assessed in the Application. Calcite, as noted as one of the indicators for fish and fish habitat in Table 6-1 of the VC document will also be assessed in the Application.	4.5.3	y

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31	Wildsight	Aug-19	N/A	Fish and fish habitat: The proponent must demonstrate that they will not deposit any deleterious substances to fish habitat as required under the federal Fisheries Act. We do not believe the proponent is able to demonstrate zero release of deleterious substances. We note that ECCC is currently considering charges against Teck for releasing deleterious substances in the Elk Valley and it is likely the proponent would violate the Fisheries Act in the same way. Additionally, quality of fish habitat must be considered, including all relevant factors. The proponent proposes to study metal concentrations in fish. They must also consider the impacts of other non-metals pollutants on fish, either directly or indirectly (selenium, nitrate, sulphate, calcite).	Water quality effects including non-metals pollutants are included in the indicators for assessing fish and fish habitat in the VC document Table 6-1.	4.9.3	y
32	Wildsight	Aug-19	N/A	Old Growth Forest: While the proponent indicates that currently there is no old growth forest within the project area, it is important to note that the project area has the potential to support old growth forest in the long term. Reclamation plans are currently unclear, but they are unlikely to support old growth forest on areas disturbed by the project. This loss of future old growth must be considered in an old growth forest VC. This is in line with the old growth component of the CEMF process and its findings showing low levels of old growth in the Elk Valley.	Old and mature forest is a valued subcomponent in Table 6-1 of the VC document. Project effects assessment on old growth forest is relative to baseline conditions and will also be considered in the cumulative assessment for any residual effects in the Application.	4.11.3	y
33	Wildsight	Aug-19	N/A	Benthic Invertebrates: These are an important indicator of stream health, as well as an important step in the bioaccumulation of selenium in fish and other aquatic species. It is important to consider not just overall abundance, but the relative species abundance, beyond just EPT and overall measures of diversity, with sufficient detail to detect the impact of water quality changes.	Agreed. Benthic invertebrates are a valued subcomponent in Table 6-1 of the VC document. Relative abundance should and has been added to the indicators in Table 6-1.	4.8.3	y

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34	Wildsight	Aug-19	N/A	Westslope cutthroat trout, Bull trout, Longnose sucker, Mountain whitefish: This project, by increasing water pollution downstream in the Elk River and Lake Koocanusa, will have impacts on these species outside the Michel Creek watershed. This impact must be considered in these VCs. It is not sufficient to rely on the Elk Valley Water Quality Plan, as North Coal has no agreement with Teck to allow them to contribute water pollution against the limits in the plan. Additionally, limits under the EVWQP in Lake Koocanusa have already been significantly exceeded for selenium, suggesting the acceptable levels that this project could contribute to the EVWQP would be zero. Impacts on fish in Lake Koocanusa are being studied by the Lake Koocanusa Monitoring and Research Working Group, a bi-national body aiming to develop a site-specific selenium limit to protect fish in Lake Koocanusa and downstream (including US endangered white sturgeon). While that process isn't expected to reach a recommendation for governments on that selenium limit until 2020, all current indications are that this limit will be lower than the 2ug/L, in order to protect all fish and meet US and Canadian regulatory requirements (especially the US Endangered Species Act). As 2ug/L, the limit in the EVWQP, has already been significantly exceeded in Lake Koocanusa, it is highly unlikely that this project's water pollution would fit within the lower limit to be set by the LKMRWG. Therefore, VCs must consider the cumulative impact on each species individually and cannot rely on the EVWQP. Additionally, the EA must consider the ongoing LKMRWG process and the potential that current limits in the EVWQP are not protective of aquatic life. Should Canada fail to limit pollutants crossing the border in Lake Koocanusa to levels safe for aquatic life, Canada risks running afoul of the 1909 Boundary Waters Treaty between Canada and the USA. Consideration of the Boundary Waters Treaty and the LKMRWG process in the EA process must be included.	As presented in Table 6-1 of the VC document, effects on fish from water quality changes will be assessed under the Aquatic Health Assessment in the Application. Comments on the potential risks to aquatic life across the Canadian border have been noted. The cumulative effects assessment on aquatic life will be included in the Application.	4.10.3	y

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35	Wildsight	Aug-19	N/A	Burbot, Northern pikeminnow, peamouth chub, Kokanee: By increasing water pollutant levels in the Elk River and Lake Koocanusa, these species will certainly be impacted. As explained above for other fish species, these impacts must be considered. Additionally, other sensitive downstream species that must be included are redside shiner (potentially the most sensitive species in Lake Koocanusa, may be a limiting factor for the site-specific selenium standard to be set by the Lake Koocanusa Monitoring and Research Working Group) and white sturgeon (a US endangered species, highly sensitive to selenium and present in the Kootenai River downstream).	Effects on fish from water quality changes will be assessed under the Aquatic Health Assessment in the Application. As noted in Table 6-1 of the VC document, fish and fish habitat valued subcomponents include Westslope cutthroat trout, bull trout, longnose sucker, and mountain whitefish. The water quality limits for the Project will need to be met at levels where cumulative effects will not be measurable on burbot, northern pikeminnow, peamouth chub, Kokanee or redside shiner. Therefore, studies on these species are not warranted.	4.10.3	y
36	Wildsight	Aug-19	N/A	Birds: As selenium in water can impact reproductive success and growth in aquatic species (e.g. American dippers, spotted sandpipers), reproductive success and growth must be studied, not just general population metrics (reproductive success and growth may be much earlier indicators of problems than overall population). Testing for selenium levels in tissue or eggs, when possible, should be included for these aquatic species.	Effects on birds linked to aquatic systems will be assessed under aquatic health and wildlife health VCs in the Application.	4.10.3, 4.13.3	y

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37	Wildsight	Aug-19	N/A	Spotted sandpiper: American Dippers are not an all-encompassing and reliable ecosystem indicator because there are many other species which are not year-round residents, who have different diets and who may be more sensitive. Dippers should not be a surrogate for other riverine habitat users. Teck has studied the effect of water pollution on spotted sandpipers (e.g. in "Evaluation of Selenium Sensitivity of Spotted Sandpipers Breeding in the Elk River Watershed of Southeastern British Columbia", 2016). It would be unreasonable to think that this aquatic species, studied in depth by Teck, would be covered by the very general wildlife health VC. Additionally, spotted sandpipers themselves are good bioindicators and thus important to consider for the following reasons: ● Not year-round residents: this allows a better indication of Se exposure to all of the other birds species that are migratory in the Elk Valley (e.g. red-winged blackbirds, northern waterthrush, varied thrush, perhaps even some of the waterfowl species like harlequin ducks and canada geese). Also, there is some evidence that sandpipers reach an equilibrium of selenium in their blood within two weeks of arriving on their breeding grounds and sandpipers are only exposed to one site-specific level of selenium in each breeding season. In contrast, the majority of dippers move around throughout the year (and thus are exposed to varying levels of selenium). ● Different diet: sandpipers do not eat the same invertebrates as dippers. They cannot dive down to the bottom of streams to get at the benthic invertebrates in the way that dippers can and thus eat different species mostly accessed by probing. They are more likely to eat smaller invertebrates, worms, midges, beetles and scraper species, as well as snapping up flying insects and eating insects that are not aquatic (since they spend their time on the banks and shorelines of bodies of water). They are not known to target fish and fish eggs during the breeding season, as dippers are. ● More sensitive: There is some evidence that sandpipers are more sensitive to selenium toxicity. Hatchability of eggs was lower in sandpipers even though levels of selenium were lower than in dippers (Harding et al, 2005). Dippers may not be as sensitive to selenium. ● Better studied in general: spotted sandpipers have been studied in more depth in the Elk Valley than dippers have. Teck has previously used sandpipers as their species of choice for biomonitoring (at least in 2013/2014). Furthermore, spotted sandpiper eggs are more frequently collected and analyzed throughout BC, thus there are other reference values to use,	Spotted sandpiper will be a species considered in the wildlife health risk assessment in the Application; however, the potential effects on relative abundance and habitat will not be significantly different than the assessment of changes to riparian habitat and American dipper; therefore, spotted sandpiper are not included as a separate subcomponent under wildlife and wildlife habitat in the VC document.	4.14.3	y

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				whereas there is less data on american dippers. ● Easier to access nests and more common and abundant (in breeding season): if nests are going to be monitored, or eggs are going to be collected, in the future, it is much easier to collect these from sandpipers than from dippers. They nest on the ground on rock bars, rather than on steep rocky cliff faces or under high bridges. This will allow for a larger sample size and more accurate data.			

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38	Wildsight	Aug-19	N/A	Clark's Nutcracker: The Clark's Nutcracker should be included as a separate sub-component. The species is known to occupy the Michel Creek watershed. Mid to upper elevations in the Michel Creek watershed often have a high density of whitebark pine. While the species is not known to be highly sensitive to human disturbance they are dependent on the success of whitebark pine cone crops (and limber pine cone crops to a lesser extent). A recent study from the Greater Yellowstone Ecosystem documented two years of a population wide Clark's failure to breed. These two years coincided with very low whitebark pine cone crops. The species is also believed to be threatened by tree mortality and reduced cone production resulting from beetle outbreaks and blister rust. Maintaining and restoring healthy populations of limber and whitebark pine is essential to the health and function of Clark's Nutcracker populations. The Clark's Nutcracker occupies both montane lower elevations and subalpine and alpine habitats. Proposed mining activities would likely severely impact both these habitats at a large spatial scale and could further threaten the viability of both whitebark pine and Clark's Nutcracker populations. Clark's Nutcrackers also breed early in the year with peak breeding starting as early as February and lasting until late May, making avoiding operations during the breeding season more challenging compared with migratory birds. In addition, very little is known about their sensitivity during the winter nesting period and this factor should be addressed in the EA process going forward. As the Clark's Nutcracker has very different and specific habitat and food needs from other bird species, it should be considered as a separate subcomponent.	Whitebark pine distribution and critical habitat will be assessed as a subcomponent of Rare or Highly Valued Plants in the Application.	4.12.3	y
39	Wildsight	Aug-19	N/A	Columbia spotted frog: Study of the impact on western toad or wildlife health in general as indicated should not be surrogates for Columbia spotted frog. As noted the Columbia spotted frog is considered sensitive to water pollution. It is studied in Teck's work on selenium and other water pollution in the Elk Valley, alongside the western toad. Given the high likelihood of an increase in water pollution, it is crucial to study the impact on sensitive aquatic species, which must include the Columbia spotted frog specifically. It would be unreasonable to think that this sensitive aquatic species would be covered by the very general wildlife health VC.	Columbia spotted frog will be a species considered in the wildlife health risk assessment; however, the potential effects on relative abundance and habitat will not be significantly different than the assessment of changes to riparian habitat; therefore, Columbia spotted frog are not included as a separate subcomponent under wildlife and wildlife habitat in the VC document.	4.14.3	y

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40	Wildsight	Aug-19	N/A	Biodiversity: Biodiversity should be considered as a VC. The projects impact on rare grasslands, species at risk, riparian areas, water quality, wildlife habitat and connectivity is substantial and biodiversity should be assessed cumulatively as a separate subcomponent. This is inline with commitments from Teck for a net-zero impact on biodiversity. In the long term, the growing worldwide biodiversity crisis cannot be ignored in this EA and cumulative effects of which this project is part must be addressed directly.	North Coal agrees that overall biodiversity is important; however, the suite of terrestrial and aquatic life VCs already incorporate indices of diversity and relative abundance that can be used as indicators in the overall biodiversity management and monitoring plan that will be included in the Application.	14.0	y
41	Wildsight	Aug-19	N/A	Health: Country foods must specifically address potential impacts of cumulative water pollution on the health of those who consume significant amounts of fish from Lake Koocanusa. Scoping on this problem in the broader context of the Elk Valley Water Quality Plan has still not been completed to determine how people may be affected.	Country foods including water will be assessed in the Human Health Risk Assessment of the Application.	8.1.3	y
42	ECCC24	2019-04-02	Chelsey Cameron (ECCC)	Wildlife and Wildlife Habitat – Little Brown Myotis Recommendation: ECCC recommends that the Proponent consider assessing bats as a collective guild, which would include consideration of both SARA-listed species (Little Brown Myotis and Northern Myotis), as well as migratory bat species with potential to be affected by the proposed Project. Rationale: ECCC notes that three migratory bat species (Silver-haired Bat, Hoary Bat, and Eastern Red Bat) with potential to be affected by the proposed project are identified as high priority candidates for assessment by COSEWIC and are currently planned for inclusion in a future call for bids. ECCC also notes that Northern Myotis, a SARA-listed Endangered species, was identified during baseline studies.	The effects assessments of little brown myotis and northern myotis will consider roosting habitat.	Addressed in Section 4.13.3	Y